

WHAT IS CLAIMED IS:

1. A method comprising:

encapsulating a variable length frame into at least one fixed length codeword comprising an integer number of bytes, wherein a first byte of the codeword is a synchronization byte.
2. The method of claim 1 wherein if an end of a frame occurs within a codeword, then a position of the end of the frame within the codeword is indicated by a control byte that follows the synchronization byte.
3. The method of claim 1 wherein a start of a new frame is indicated within a codeword by a start-of-frame marker, wherein the start-of-frame marker may be located anywhere within the codeword after the synchronization byte.
4. The method of claim 1 wherein the synchronization byte comprises one of two synchronization byte values including a first synchronization byte value indicating that the codeword is an all data codeword, and a second synchronization byte value indicating that the codeword is not an all data codeword.
5. The method of claim 1 and further comprising removing a preamble and a start frame delimiter of the frame leaving a remaining portion of the frame;

6. The method of claim 5 and further comprising calculating a new cyclic redundancy check (CRC) of a remaining portion of the frame.

7. The method of claim 6 and further comprising appending the new CRC to the remaining portion to provide a plurality of bytes to be encapsulated.

8. The method of claim 7 wherein said encapsulating comprises encapsulating the plurality of bytes into a plurality of the fixed length codewords.

9. The method of claim 1 wherein the codeword is one codeword selected from at least five different types of codewords.

10. The method of claim 1 wherein the codeword is a codeword selected from the group of codewords comprising:

- a) an all data codeword;
- b) an end of frame codeword;
- c) an all idle codeword; and
- d) a start of frame codeword.

11. The method of claim 1 wherein the start of frame codeword comprises one of the following codewords:

- 1) a start of frame while idle codeword; and

2) a state of frame while transmitting data codeword.

12. The method of claim 1 and further comprising transmitting the at least one codeword over a media.

13. The method of claim 1 wherein the at least one fixed length codeword is 65 bytes in length.

14. A method comprising:
encapsulating a variable length frame into at least one fixed length codeword comprising an integer number of bytes, wherein a start of a new frame is indicated within the codeword by a start-of-frame marker, wherein the start-of-frame marker may be located anywhere within the codeword after the first byte of the codeword.

15. The method of claim 14 wherein a first byte of the codeword is a synchronization byte.

16. The method of claim 15 wherein if an end of a frame occurs within a codeword, then a position of the end of the frame within the codeword is indicated by a control byte that follows the synchronization byte.

17. The method of claim 14 wherein the at least one fixed length codeword is 65 bytes in length.

18. A method comprising:

- removing a preamble and a start frame delimiter of a frame leaving a remaining portion of the frame;
- calculating a cyclic redundancy check (CRC) of a remaining portion of the frame.
- appending the CRC to the remaining portion to provide a plurality of bytes;
- placing the plurality of bytes into at least one fixed length codewords, each codeword comprising an integer number of bytes, wherein a first byte of the codeword is a synchronization byte, wherein a start of a new frame is indicated within a codeword by a start-of-frame marker, wherein the start-of-frame marker may be located anywhere within the codeword after the synchronization byte.

19. The method of claim 18 wherein each of the codewords is selected from the group of codewords comprising:

- a) an all data codeword;
- b) an end of frame codeword;
- c) an all idle codeword; and
- d) a start of frame codeword.

20. An apparatus comprising:

a MAC;

a PHY coupled to the MAC, the PHY comprising an encapsulation, the encapsulation being adapted to encapsulate a variable length frame into at least one fixed length codeword comprising an integer number of bytes, wherein a first byte of the codeword is a synchronization byte.

21. The apparatus of claim 20 wherein the encapsulation being adapted to encapsulate a variable length frame into at least one fixed length codeword comprising an integer number of bytes, wherein a first byte of the codeword is a synchronization byte, a first byte of the codeword is a synchronization byte, wherein a start of a new frame is indicated within a codeword by a start-of-frame marker, wherein the start-of-frame marker may be located anywhere within the codeword after the synchronization byte.

22. The apparatus of claim 20 wherein the fixed length codeword is 65 bytes in length.